UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,580	08/24/2001	Roger Vinas	60004033-3	3619

7590 11/15/2005

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER	
POON, KING Y	

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/935,580	VINAS ET AL.	
	Examiner	Art Unit	
	King Y. Poon	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 August 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 June 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 5-8, 16, 17, 19-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Ichikawa (US 5,729,555).

Regarding claim 1: Ichikawa teaches a method of printing a test pattern (col 2, lines 13-24) having a plurality of elements, for determining an operational parameter of a printing device (col 7 lines 21-33, test pattern is checked for mismatch error), the method comprising the steps of: determining the size of a print medium presently loaded in the printing device (col 6 lines 13-16, paper size, i.e. print medium size, is determined by keyboard input. In fig 1, printer 12 has a paper tray which stores the print medium. Therefore, it is presently loaded in the printing device); adjusting, in accordance with the determined size of the print medium, the relative position on the print medium of a plurality of elements of the test pattern to be printed (col 6, lines 21-28, a test pattern transformation based on the determined paper size is performed); and printing the test pattern on the print medium (fig 1, print result 26).

Regarding claim 2, Ichikawa teaches a method as claimed in claim 1, further comprising: arranging the elements of the test pattern during said adjusting step in a layout which substantially minimizes the amount of print medium that is expended to

print the whole test pattern (col 6:lines 30-63, during an adjustment step, the x- and y-coordinates are adjusted to fit the paper size, thereby minimizing paper expenditure by scaling the test pattern to 5t the size of each paper. It will not print the pattern on extra sheets because the pattern is scaled to fit the page).

Regarding claim 5: Ichikawa teaches a method as claimed in claim 1, further comprising: determining both the width and the height of the print medium during the size determining step (col 6, lines 13-1 6, when paper size is determined, its width (x) and height (y) are noted. See col 6 lines 57-63).

Regarding claim 6, Ichikawa teaches a method as claimed in claim 1, further comprising: holding the test pattern in a memory of the printing device (fig 1, test pattern files 22), and accessing said memory prior to the printing step (col lines 20-22 & fig 11, step 1108, test pattern files are read from the external storage).

Regarding claim 7, Ichikawa teaches a method as claimed in claim 1, further comprising: determining the size of the print medium during the size determining step, wherein said size of the print medium is determined automatically by the printing device (col 6:lines 13-16, paper size determination routine is automatic in method of fig 11 because without it, the test pattern could not be properly re-sized).

Regarding claim 8, Ichikawa teaches a method as claimed in claims 1, further comprising: determining the size of the print medium during the size determining step, wherein the size of the print medium is determined by a user of the printing device and is input by the user to the printing device (col 6, lines 13-19, user inputs print size).

Regarding claim 16, Ichikawa teaches a method as claimed in claim 1, wherein at least one of the elements of the test pattern comprises a plurality of sub-elements, the method further comprising: adjusting the size of at least one sub-element of said at least one element to be printed in accordance with the determined size of the print medium, but not reducing below a minimum size of sub-element necessary to determine the operational parameter of the printing device, during the print medium adjusting step (col 6, lines 30-63, size of test pattern is reduced based on paper size, wherein magnification has limits).

Regarding claim 17, Ichikawa teaches a method as claimed in claim 1, wherein the test pattern comprises an image (fig. 9, elements 9 & 10, image order output patterns).

Regarding claim 19, Ichikawa teaches a method as claimed in claim 1, further comprising: arranging the elements of the test pattern in a layout which substantially maximizes the accuracy with which the operational parameter of the printer may be determined, during the adjusting step (col 6:lines 30-63, magnification is performed to maintain the scalable consistency leading to maximum accuracy for page size changes).

Regarding claim 20, Ichikawa teaches a method as claimed in claim 1, wherein at least one of the elements of the test pattern comprises a plurality of sub-elements, the method further comprising: adjusting either the size of at least one sub-element or the number of sub-elements to be printed or both the size and the number of sub-elements in accordance with the determined size of the print medium, to substantially

maximize the accuracy with which the operational parameter of the printer may be determined, during the adjusting step (col 6:lines 30-63, size of test pattern is reduced based on paper size, wherein magnification has limits & fig 9, patterns comprise sub-elements).

Regarding claim 21: Ichikawa teaches a method of setting an operational parameter of a printing device comprising the steps of: determining the size of a print medium presently loaded in the printing device (col 6, lines 13-16, paper size, i.e. print medium size, is determined by keyboard input. In fig 1, printer 12 has a paper tray which stores the print medium. Therefore, it is presently loaded in the printing device); adjusting, in accordance with the determined size of the print medium, the relative position on the print medium of a plurality of elements of a test pattern to be printed (col 6, lines 21-28, a test pattern transformation based on the determined paper size is performed); printing the test pattern on the print medium (fig 1, print result 26); determining from the printed test pattern a value for the operational parameter of the printing device (col 7, lines 21-25, a status of the printing device is determined from the test pattern); and setting the operational parameter of the printer to said determined value (col 7, lines 21-34, status is used to set the printer to a "correct" or "error" parameter).

Regarding claim 22, Ichikawa teaches a method as claimed in claim 21, further comprising: arranging the elements of the test pattern in a layout which substantially minimizes the amount of print medium that is expended to print the whole test pattern, during the adjusting step (col 6, lines 30-63, during an adjustment step, the x- and y-

coordinates are adjusted to fit the paper size, thereby minimizing paper expenditure by scaling the test pattern to fit the size of each paper. It will not print the pattern on extra sheets because the pattern is scaled to fit the page).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 3-4, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa (US 5,729,555) and Otsuka et al (EP 0 608 055).

Regarding claim 3, Ichikawa teaches a method as claimed in claim 1, further comprising: determining the width of the print medium during the size determining step (col 6:lines 13-16, when paper size is determined, its width (x) and height (y) are noted. See col 6:lines 57-63). Ichikawa does not teach the method for arranging to be printed as many test pattern elements as will fit across the determined width of the print medium during the adjusting step.

However, Otsuka et al. teach a method for determining the width of the print medium during a size determining step (col 6, lines 52-54); and arranging to be printed as many test pattern elements as will fit across the determined width of the print medium during the adjusting step (col 7; line 1 - col 8, line 18 & figs 6 and 7, the width determination adjusts the number of characters that may be printed across the width).

Accordingly, it would have been obvious to one skilled in the ad at the time of the invention to have used the method of printing test patterns across the width of the print medium taught by Otsuka in the method for printing a test pattern taught by Ichikawa because (col 1, lines 35-42 of Otsuka et al.) the teachings of Otsuka et al. allow for printing of test patterns of plural shapes and sizes depending on the width of the paper.

Regarding claim 4: the claim rejection of claim 3 is representative of claim 4. See Otsuka et al. wherein the method further comprises: arranging to be printed subsequent to one or more media advance movements by the printing device any remaining test pattern elements once the maximum number of test pattern elements that can be printed across the width of the print medium is reached (fig 7, the printing continues after the maximum number of test patterns (1, 2 or 7) have been printed across the width, and continues said printing until all test patterns have been printed).

Regarding claim 15, Ichikawa teaches a method as claimed in claim 1, but does not teach wherein at least one of the elements of the test pattern comprises a plurality of sub-elements, the method further comprising: adjusting the number of sub-elements of said at least one element to be printed in accordance with the determined size of the print medium, but not reducing below a minimum number of sub-elements necessary to determine the operational parameter of the printing device, during the print medium adjusting step.

However, Otsuka et al. teach wherein at least one of the elements of the test pattern comprises a plurality of sub-elements (col 7; line 1 - col 8 line 18 & figs 6 & 7, test pattern consists of multiple elements); the method further comprising: adjusting the

number of sub-elements of said at least one element to be printed in accordance with the determined size of the print medium (col 7; line 1 - col 8; line 18 & figs 6 & 7, the width determination adjust the number of characters that may be printed across the width), but not reducing below a minimum number of sub-elements necessary to determine the operational parameter of the printing device, during the print medium adjusting step (the minimum number of sub-elements per width is 1, otherwise, the testing would not work).

Accordingly, it would have been obvious to one skilled in the art at the time of the invention to have used the method of printing test patterns across the width of the print medium taught by Otsuka et al. in the method for printing a test pattern taught by Ichikawa because (col 1:lines 35-42 of Otsuka et al.) the teachings of Otsuka et al. allow for printing of test patterns of plural shapes and sizes depending on the width of the paper.

5. Claims 9-11 & 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa (US 5 729 555) & Tanaka (US 6 317 147).

Regarding claim 9, Ichikawa teaches a method as claimed in claim 1, comprising the further step of automatically measuring the printed test pattern to determine an operational parameter of the printing device after user input (fig 11, steps 1104-1 116, operational parameter determination is done automatically once test pattern is selected).

However, Tanaka teaches an automatic determination sequence in fig 5 that is performed without user input.

Accordingly, it would have been obvious to one skilled in the art at the time of the invention to have used the automatic determination taught by Tanaka in the method taught by Ichikawa because using the Tanaka teachings provide an internal correction method without the need for the user to check parameter issues manually.

Regarding claim 10, the claim rejection of claim 9 is representative of claim 10. See Tanaka wherein the automatic measurement of the test pattern further comprises: optically scanning the elements of the printed test pattern (col 14, lines 59-62).

Regarding claim 11, the claim rejection of claim 10 is representative of claim 11. See Tanaka wherein the method further comprising: choosing the relative positioning of the elements of the test pattern during the adjusting step, to thereby substantially minimize the number of scanning movements required to optically scan the whole of the test pattern (in the Tanaka reference, the scanning movements are minimized due to a stationary positioning of the optical scanner).

Regarding claim 13, Ichikawa teaches a method as claimed in claim 1, but do not teach wherein the test pattern is a color calibration pattern and each element of the test pattern relates to the calibration of one of the primary colors of the printing device.

However, Tanaka teaches (col 4, lines 15-23 & fig 2, colors are used, and a calibration system is implemented for each pattern).

Accordingly, it would have been obvious to one skilled in the art at the time of the invention to have used the automatic determination taught by Tanaka in the method

taught by Ichikawa because using the Tanaka teachings provide an internal correction method without the need for the user to check parameter issues manually.

Regarding claim 14, the claim rejection of claim 13 is representative of claim 14. See Ichikawa wherein each element of the test pattern comprises sub-elements, the method further comprising: adjusting the relative positions of the sub-elements during the print medium adjusting step in accordance with the determined size of the print medium, to substantially minimize the amount of print medium that is expended to print the whole test pattern (col 6, lines 30-63, during an adjustment step, the x- and y - coordinates are adjusted to fit the paper size, thereby minimizing paper expenditure by scaling the test pattern to 54 the size of each paper. It will not print the pattern on extra sheets because the pattern is scaled to fit the page).

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa (US 5 729 555) & Salgado (US 6 643 035).

Regarding claim 12, Ichikawa teaches a method as claimed in claim 1, comprising a further step in which the user of the printing device determines from the printed test pattern an operational parameter of the printing device (col 3, lines 22-25 & col 7, lines 28-33, the user determines an operational parameter, i.e., mismatch error). Ichikawa does not teach the user entering or adjusting the parameter via an interface with the printing device.

However, Salgado teaches wherein, (col 4, lines 22-23), the user adjusts the parameter by interfacing with the print device.

Accordingly, it would have been obvious to one skilled in the art at the time of the invention to have used the method for adjusting the parameter taught by Salgado in the test print method taught by Ichikawa because the teachings of Salgado allow for an adjustment after the user of Ichikawa receives an error message.

7. Claims 18 & 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa (US 5 729 555) & Anzai (US 5 828 818).

Regarding claim 18, Ichikawa teaches a method as claimed in claim 1, but does not teach the method comprising the initial step of, prior to determining the print medium size, unloading from the printing device, a roll of print medium and loading a sheet of print medium into the printing device.

However, Anzai teach prior to determining the print medium size, unloading from the printing device, a roll of print medium and loading a sheet of print medium into the printing device (col 5, lines 45-53, paper sheet is fed into output printing device before determining paper size).

Accordingly, it would have been obvious to one skilled in the art at the time of the invention to have used the sheet loading method taught by Anzai in the test print method taught by Ichikawa because the teachings of Anzai allow for printer-independent determination of paper size which would add to the user-inputted paper size determination function taught by Ichikawa. Also, the teachings of Anzai (col 6, lines 37-39) provide measuring the paper size for page formatting.

Regarding claim 23, Ichikawa teaches a printing apparatus having a settable operational parameter, the apparatus comprising: a print engine capable of receiving instructions to print data (col 5:lines 20-22, test patterns are loaded to printer, which inherently requires a print engine capable of receiving the instructions to print this pattern; a media advancing mechanism into which print media is loadable (col 3, lines 22-25, printer prints patterns on print medium that is output to the user. This inherently requires a medium advancing mechanism into which print media is loadable); a determination means to determine the size of loaded print media (col 6, lines 13-16, paper size, i.e. print medium size, is determined by keyboard input, which inherently requires means to do so. In fig 1, printer 12 has a paper tray which stores the print medium. Therefore, it is presently loaded in the printing device); a memory device (fig 1, test pattern files 22) for storing a printable test pattern having a plurality of separable elements (col 6:lines 20-22 & fig 11, step 1108 test pattern files are read from the external storage & fig 9, test pattern has different pieces); and a processor having an input for receiving size data regarding the presently loaded print medium from the determination unit and an output to the print engine for passing instructions to print a test pattern (col 6; lines 21-28, a test pattern transformation based on the determined paper size is performed by the printer), which inherently requires a process to process the input and also inherently requires an output to send signals to the engine to perform output); wherein the processor, in use, , in accordance with the determined size of the print medium, the relative position on the print medium of a plurality of elements of the

test pattern to be printed (col 6, lines 21-28, a test pattern transformation based on the determined paper size is performed).

Ichikawa does not teach a media measurer or a process that receives input from the media measurer.

However, Anzai teaches a media measurer (col 5:line 62-67 - col 6, lines 19-24, vertical counter 9 & horizontal counter 12 measure the height and width sizes, respectively) for measuring the size of loaded print media; a processor (col 6, lines 25-39, processor CPU 4 receives paper size information for image formatting) having an input for receiving size data regarding the presently loaded print medium from the media measurer.

Accordingly, it would have been obvious to one skilled in the ad at the time of the invention to have used the sheet loading method taught by Anzai in the test print method taught by Ichikawa because the teachings of Anzai allow for printer-independent determination of paper size which would add to the user-inputted paper size determination function taught by Ichikawa. Also, the teachings of Anzai (col 6, lines 37-39) provide measuring the paper size for page formatting. Furthermore, since Anzai teaches a processor that includes a reception of size data from the media measurer, the inclusion of the media measurer in Ichikawa's teachings are further supported.

8. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa. (US 5 729 555) & Anzai (US 5 828 818) as applied to claim 23 above, and further in view of Tanaka (US 6 317 147).

Regarding claim 24, Anzai & Ichikawa teach a printing apparatus as claimed in claim 23, but do not teach the apparatus further comprising: a scanning carriage having a plurality of color ejection devices and an optical sensor for measuring test patterns, wherein, in use, following the printing of the test pattern by the color ejection devices, the test pattern is scanned by the optical sensor and the processor calculates from the scanned data a new or adjusted value for a operational parameter of the printing apparatus.

However, Tanaka teaches the apparatus further comprising: a scanning carriage having a plurality of color ejection devices (col 4:lines 37-40, image forming ejection devices) and an optical sensor (col 5, line 64, pair of sensors 38) for measuring test patterns (col 14,llines 59-62); wherein, in use, following the printing of the test pattern by the color ejection devices, the test pattern is scanned by the optical sensor (col 14, lines 59-62) and the processor calculates from the scanned data a new or adjusted value for a operational parameter of the printing apparatus (fig 5, steps s6-s9, correction device calculates the current operational parameter and then adjusts it to match the correct operational parameter).

Accordingly, it would have been obvious to one skilled in the art at the time of the invention to have used the automatic determination taught by Tanaka in the method taught by Ichikawa because using the Tanaka teachings provide an internal correction method without the need for the user to check parameter issues manually. Furthermore, (col 2, lines 49-53) the Tanaka teachings increase the productivity and form a quality image without color drift.

Response to Arguments

9. Applicant's arguments filed 8/19/2005 have been fully considered but they are not persuasive.

With respect to applicant's argument that Ichikawa does not teach adjusting relative position on the print medium of a plurality of elements of a test pattern, has been considered.

In reply: Column 6, lines 50-68, clearly teaches the magnification ratio of printed elements in the X direction and the printed elements in the Y directions are different depends on paper size. In other words, relative position of elements in the x direction of element 1 is different compare to the relative position of elements in the Y direction of the same element 1 depends on paper size.

With respect to applicant's argument Ichikawa does not teach substantially minimized the amount of print medium that is expended to print the whole test pattern; has been considered.

In reply: A test pattern of 60 inches X 60 inches would requires a print medium with the size of 60X60 inches. By teaching fitting the test pattern into a print medium would allowed users to print the test pattern on to smaller paper which would substantially minimized the amount of print medium that is expended to print the whole test pattern.

With respect to applicant's argument that Ichikawa does not teach minimum size of a sub-element, has been considered.

In reply: Fig. 9 teaches the text pattern has different elements (e.g, line elements or character elements, fig. 9) and sub-elements such as A, B, C etc. Column 6, lines 30-60 teaches the sub-elements are being reduced in size depends on the paper size. Once the magnification is set, the sub-elements would not be reduced below the set magnification and the set magnification would become the operational parameter of the printing device.

With respect to applicant's argument that Ichikawa does not teach arranging, has been considered.

In reply: Column 6, lines 50-65 teach arranging the graphic/elements, sub-elements in the X direction and in the y direction with different distances/magnification ratio according to paper size.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

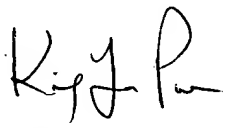
Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to King Y. Poon whose telephone number is 571-272-7440. The examiner can normally be reached on Mon-Fri 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

November 10, 2005



KING Y. POON
PRIMARY EXAMINER